

REMARKS

This is in response to the Office Actions dated May 19, 2005 and August 30, 2005.

Claim 3 has been canceled. Claims 1-2 and 4-21 are now pending. It is noted that the word “over” in the claims is not limited to directly contacting, and includes situations where other layer(s) may be provided therebetween.

Claim 20 is objected to for formality reasons on page 2 of the Office Action, and is also rejected under Section 112, second paragraph. Claim 20 has been amended herein to address and resolve any potential issue in this respect. The pad electrode of claim 20 has proper antecedent basis in claim 19.

Claims 1-9 and 17-20 stand rejected under Section 103(a) as being allegedly unpatentable over Finnila. This Section 103(a) rejection is respectfully traversed for at least the following reasons.

Claim 1 requires “a semiconductor substrate; a field oxide film formed over a surface of the semiconductor substrate, the field oxide film having an aperture section; *a pad electrode, having an aperture section, formed over the field oxide film; and a penetration electrode electrically connected to the pad electrode* via the aperture section of the field oxide film, via a hole formed in the semiconductor substrate, and *via the aperture section of the pad electrode,* the hole in the semiconductor substrate being formed entirely within the aperture section of the field oxide film, when perpendicularly viewing the semiconductor substrate, so that an opening of the hole is smaller than the aperture section.” For example and without limitation, Fig. 1 of the instant application illustrates that penetration electrode 15 is electrically connected to the pad electrode 4 via the aperture section of the field oxide film 3, via a hole formed in the semiconductor substrate 1, and via the aperture section of the pad electrode 4.

Finnila fails to disclose or suggest that the penetration electrode is electrically connected to the pad electrode via at least an aperture section of the pad electrode as required by amended claim 1. In Fig. 6 of Finnila, the alleged penetration electrode 21 is not electrically connected to the pad electrode via at least an aperture section in the alleged pad electrode 23. Indeed, the alleged pad electrode 23 in Fig. 6 of Finnila has no aperture section. Finnila teaches directly away from the invention of claim 1 in these respects.

Claims 18 and 19 also require that the penetration electrode is electrically connected to the pad electrode via an aperture section in the pad electrode. Finnila fails to disclose or suggest this features. Again, the alleged pad electrode 23 in Fig. 6 of Finnila does not even have an aperture section.

Claim 2 requires that the penetration electrode is formed in a *field area* of the surface of the semiconductor substrate. The Office Action contends that the right electrode of Finnila corresponds to the claimed penetration electrode. However, the right electrode of Finnila is in an active region, not in a field region or area (see col. 3, lines 45-55; and Figs. 3-6). Thus, Finnila fails to disclose or suggest that the penetration electrode is formed in a *field area* of the surface of the semiconductor substrate as required by claim 2.

Claim 4 requires that the aperture section of the field oxide film is formed in the aperture section of the pad electrode, when perpendicularly viewing the semiconductor substrate. Again, Finnila fails to disclose or suggest this feature of claim 4.

Claim 8 requires “a hole-filling section is formed in the hole, and the hole-filling section is made of an insulating material.” It is unclear where the Examiner contends these features are in Finnila. It is requested that the Examiner identify such features in the cited art, or withdraw the rejection of this claim.

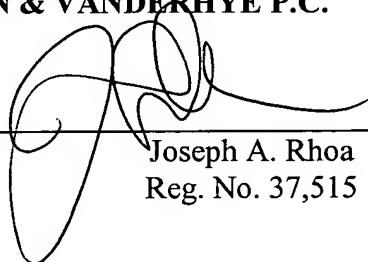
New claim 21 requires that the *aperture section in the pad electrode is larger than the aperture section in the field oxide film*, when perpendicularly viewing the semiconductor substrate. Finnila fails to disclose or suggest this feature of claim 21.

It is respectfully requested that all rejections be withdrawn. All claims are in condition for allowance. If any minor matter remains to be resolved, the Examiner is invited to telephone the undersigned with regard to the same.

Respectfully submitted,

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